WHIRRAKEE

January/February 2010 Vol. 31 No. 1

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MONTHLY NEWSLETTER OF THE BENDIGO

FIELD NATURALISTS CLUB

Bendigo Field Naturalists Club Inc.
Address for correspondence: PO Box 396, Bendigo 3552
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Syllabus organiser	Ben Goonan	
Librarian	Diana Collier (an assistant is still required)	5443 0137
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Hall Management	Maurie Lewis (assisted by Rob Moors)	0407 427179
Whirrakee contact	Sabine Wilkens e-mail: s.wilkens@latrobe.edu.au	5443 2797

Membership of the Bendigo Field Naturalists Club is open to all those interested in Natural History. The subscription rates are: Single $34; Family $40; Concession: Single $28.50; Family $34. *Whirrakee* subscription only is $34.

General meetings are held on the second Wednesday of each month. The venue for General meetings is the Golden Square Senior Citizens Building, Old High Street, Golden Square. The meeting starts with a 10 minute thing-of-the night natural history segment. The invited speaker starts at 8:00pm and meetings conclude with supper. The Annual Meeting is held in September.

Committee meetings are held on the third Wednesday of each month at 6:00pm. Members of the Committee are the Office Bearer listed above and the following members: Bob Ruddick, Ben Goonan, Liz Graham, Glenise Moors, Joy Clusker, Gemma Candy

Excursions are conducted regularly and are advertised on the diary page of the *Whirrakee*. The assembly point for excursions is the Golden Square Senior Citizens Building, unless otherwise specified. Several interclub field naturalist campouts are held every year.

The Bendigo Field Naturalists Club has one sub-group (the Fauna Study Group) and is actively involved in local conservation issues. An **indigenous garden** has been established around the Golden Square Senior Citizens Building. Working bees are advertised on the *Whirrakee* diary page.

Fauna Study Group: meets on the fourth Wednesday of the month at 7:30pm in the Golden Square Senior Citizens Building.

Chairman: John Burtonclay, Fadersons Lane, Mandurang (5439 5710)
Secretary: Bill Holsworth, 13 Nabilla Crs., Bendigo (5443 4063)
Equipment Officer: Maurie Lewis (0407 427179)

Bird Observing: Club members conduct regular bird surveys. Please contact Anne Bridley 5449 3479 or Glenise Moors 5439 6254 for details. Special bird observations should be reported to Anne Bridley 5449 3479.
To propose bird observing excursions please contact Kerrie Norris 5447 8017.

Front cover photo?...see page 2.

WHIRRAKEE

Monthly Newsletter of the Bendigo Field Naturalist Club
Vol. 31, No. 1, January/February 2010
Whirrakee takes its name from the Whirrakee Wattle (*Acacia williamsonii*) which is virtually endemic to the Bendigo region

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Authors are responsible for the accuracy of the information they use and also for any opinions expressed in their articles. Contributions will be included as soon as possible after they are received, although articles received more than one week after the monthly General Meeting will probably be too late for inclusion in the next issue of *Whirrakee*.
Articles in *Whirrakee* may be reproduced, but permission should be obtained from the Bendigo Field Naturalists Club, and acknowledgment should be given to the author and the Club. Some back issues are still available on request.

Editor's Note
Welcome back for another year of field-natting. There is usually some difficulty in filling the first Whirrakee of the year, but in my opinion, the article by Phil Dyson is making this edition a particularly special one. Phil has worked tirelessly and enthusiastically on making the wonders of the NUFG Kamarooka trees known to the members of this forward-thinking organisation and the outside world, and I am amazed and delighted that we have hard data such as that shown on page 5 from Black Saturday.
Thanks also to Ben Goonan for putting an interesting program together for our monthly meetings. This begins with the February meeting, so instead of showing your best holiday slides at the first meeting of the year, why not submit them (and some accompanying text) to the Whirrakee for publishing early this year?

Front Page Illustration – Photographer: Jase
This moth was found sometime in October at LaTrobe University, Bendigo Symmetries in nature are a pleasing phenomenon, and so is mimicry. Here the two are combined and this attractive moth is only visible because the background was a bitumen path, not a tree trunk or leaf litter. I don't know its name, but one of our members might – or else, the speaker of the May General meeting…?

Short Notices

February General Meeting Preview

Presenter: David Cameron
Senior Botanist, Flora Database Curator & Threatened Species Officer, Threatened Species and Communities Section, Biodiversity and Ecosystem Services Division, Department of Sustainability and Environment, Arthur Rylah Institute for Environmental Research.

Title: "Conservation status of the Victorian flora: a progress report on the current review of status using IUCN Red List categories and criteria"

Images needed for next BFNC publication

In 2008 Darren Green provided the *Whirrakee* with pictures, descriptions and notes about the frogs and reptiles of the Bendigo area. With the help of Dale Gibbons, these have now been revised and compiled into a book, similar to the other books published by the Bendigo FNC. The City of Greater Bendigo has provided some funds towards the publication of the book. We are now sending sections of the book to experts to check for errors, omissions, improvements, etc. before it is printed.

We have a very good collection of pictures from Darren Green, some from Dale Gibbons, and other herpetologists, however, we need a few more pictures that are close-ups showing important characteristics of the species.
If you have pictures of the following, please get in touch with Bill Holsworth, ph: 5443 4063
Any of the BLIND SNAKES Typhlopidae, especially the WOODLAND BLIND SNAKE ***Ramphotyphlops proximus*** and GRAY'S BLIND SNAKE ***Ramphotyphlops nigrescens***
Also the BLACK ROCK SKINK ***Egernia saxatilis*** and the MALLEE SPADEFOOT TOAD ***Neobatrachus pictus***.

Slide or digital photos are required.
Thank you for your help.

DVDs available for borrowing

Diana Collier has two DVDs which she is happy to lend. Below is a description of these. Please contact Diana (ph. 5443 0137*), if interested in viewing them.*

"The DVD ***Rainforest: the secret of life*** is available for loan from the BFNC library. This program was seen on TV last November, and has been available for sale since. To date no DVDs are held in the 'book room', and this is a chance to borrow one. Interest from members is sought – by borrowing it, or a request for the DVD to be shown at a particular meeting or another idea. The description on the back cover of the DVD includes "Discover an ancient environment, that has been evolving in different parts of the world for over one hundred million years. High on the slopes of extinct Mt. Warning Volcano on the Queensland-N.S.W. border... a unique rainforest has survived ...home to many rare and endangered species and is intimately connected to ...other rainforests around the world...[once] Gondwana ..."

There is also a DVD on **Climate Change**, which is a *Sisters on the Planet* production. This DVD is part of *Make poverty history series* of OXFAM; it shows 'Six inspirational women and their fight against climate change'. The program is 45 minutes long, but the accounts of the six women can be selected. The young women come from Hamilton, Victoria; Caeteret Islands, just off Bougainville, PNG; Bangladesh; Karamoja in Uganda; Hackney in London; Brasilia, Brazil.

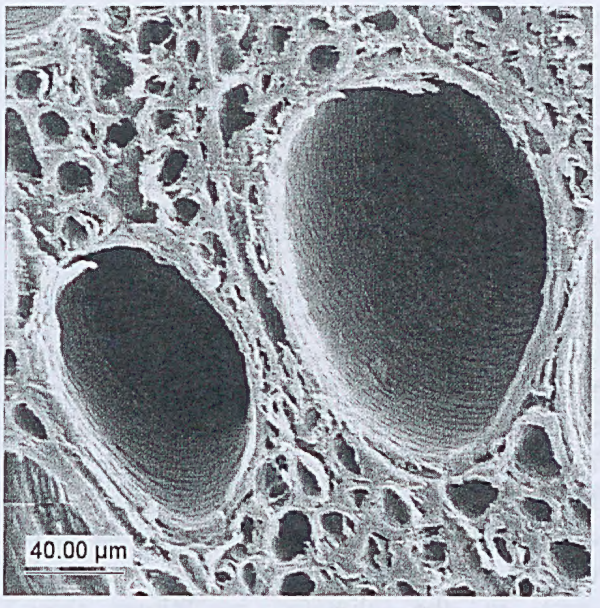
The physiological response of plantation trees at Kamarooka to Black Saturday, 7 February 2009

Phil Dyson, Hydrogeologist and NUFG member

Editor's note: This article is timed to coincide with the anniversary of Black Saturday. It is fantastic that Phil has instrumentation that can give us an insight how trees respond to such extreme conditions.

On 7 February 2009 at 7.14 am, the sun rose over northern Victoria and the light of the new day fell on the trees in the Northern United Forestry Group (NUFG) plantation at Kamarooka. The overnight stillness of the sapwood was disturbed as the trees awakened. At dawn, the atmosphere contained much less water than the moist interior of the inner leaves. The young eucalypts, driven by osmosis and photosynthesis, began their familiar routine. Exposed to the light, they pumped potassium into the guard cells surrounding each of the tiny water valves (stomata) in their leaves, causing them to swell and open, allowing carbon dioxide to enter and moisture to escape to the atmosphere. Water lost to the air was replaced by water pulled up the stem and roots and out of the soil below via thousands of tiny tubes in the xylem (sapwood), see Figure 1.

NUFG measures the upward flow of water through the stem of trees in the plantation using some clever instrumentation (sap flow sensors) installed with the support of an Australian company called ICT International. ICT specialises in measuring the water use of vegetation. Three tiny probes about 50mm long are placed in the sapwood of the trees. The central electrode injects a pulse of heat every 30 minutes and the two probes immediately above and below sense the heat transfer as water moves up the tree via the xylem tubes. The velocity of the sap is reported to a large database powered by a small solar panel.



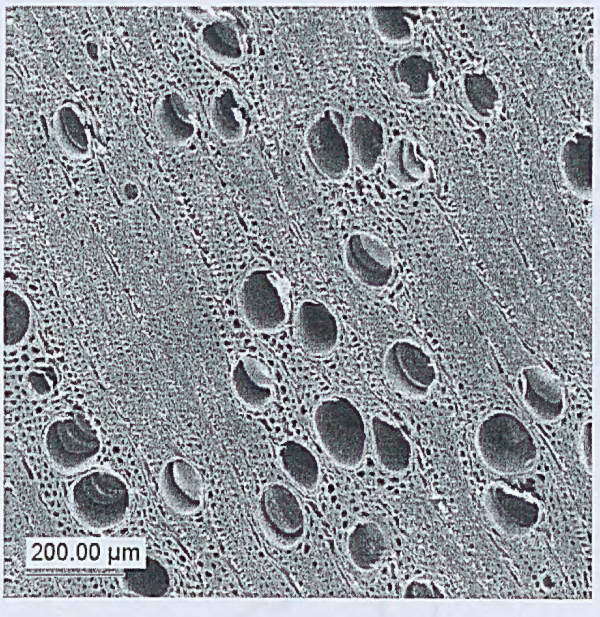


Figure 1 - Electron micrographs showing the xylem tubes in the stem of E. cladocalyx *from the NUFG plantation at Kamarooka (courtesy of Dr. Sabine Wilkens - Latrobe University)*

On the morning of 7 February, I used remote access technology to log in to the Kamarooka plantation database and watch the trees as the day progressed. I also watched the live data from the climate station at the Bendigo airport. By 9.00 am, the temperature had reached 30 degrees and the relative humidity was falling rapidly.

Water began moving up the stems of the plantation trees as soon as the sun came up. Within 45 minutes after sunrise the trees were close to their usual maximum daily transpiration rates. As the temperature rose above 30 degrees from 9 am, and the relative humidity plummetted, the Kamarooka trees continued to pump water out of the soil.

By 10 am, the temperature was escalating and the relative humidity continued to fall rapidly. The atmospheric demand for water became much greater than the trees could supply and in the face of enormous stress, they called on a survival technique learnt through more than 20 million years of experience with drought. Soon after 10 am, the trees released a hormone-like substance called abscisic acid that allowed enough potassium to leak from the guard cells for the stomata to shrink and reduce transpiration by about 50 percent (see Figure 2).

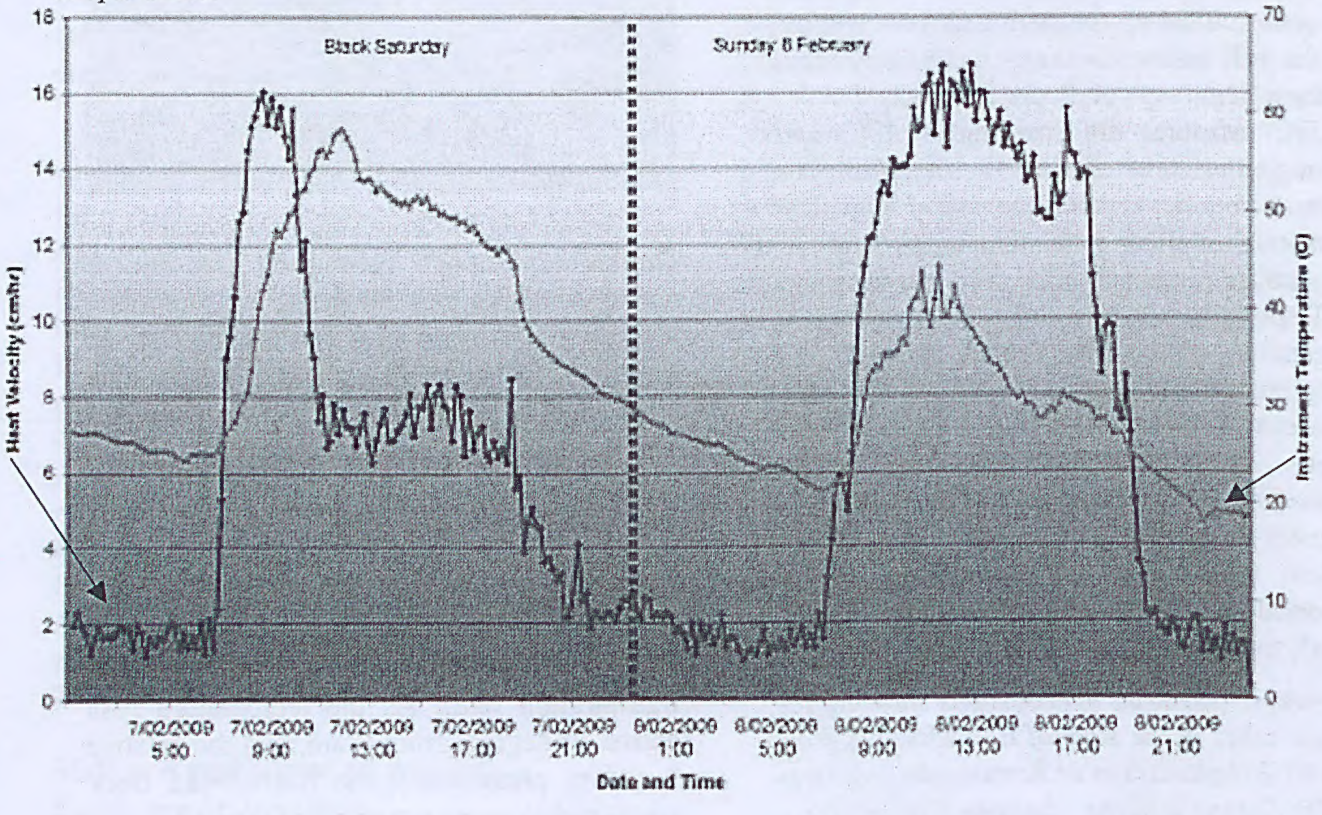
The Kamarooka plantation trees help us to understand that trees are not static. In fact they are dynamic organisms that react and adjust to the climatic conditions they experience on a daily basis. They are programmed to deal with many different stresses in different ways. They have been around for a long time and have had the opportunity to adapt to past climatic conditions very different to those that prevail today.

By removing waterlogging in a saline environment, some trees, previously thought to have been 'salt sensitive', will continue to thrive despite great masses of salt in their root zone. Turn up the heat and the atmospheric demand to unbearable levels and they shut down their water loss. Through a long history of evolution, trees have clearly become programmed to deal with tough environmental conditions.

Evolutionary pressures are different in different landscapes and landforms. A tree adapted to the floodplain of a river is unlikely to experience the same stresses as a tree growing in a rock landscape on the side of a hill. However, we are yet to fully understand the extent of this evolutionary programming. We continue to wonder, for example, about the ability of different species to deal with different geochemical conditions in the vast range of Australian landscapes.

Perhaps the time has come for a more serious marriage between tree physiology and landscape morphology (geomorphology).

Figure 2 – Sap flow measured as raw heat velocity in Eucalyptus cladocalyx *in the NUFG plantation on February 7 & 8 2009 – note instrument temperature is higher than actual air temperature.*



SEANA 2010 Autumn Camp

The Field Naturalists Club of Ballarat invites you to attend the SEANA Autumn Camp which will be based at Pax Hill Activity and Conference Centre (Scout Camp), 450 Spencer Street, Ballarat East, at the corner of Spencer and Fussell Street, 5km southeast of the city centre.

Bunkhouse accommodation is available at Pax Hill with breakfast and dinner in the dining room and packed lunches. Amenity blocks at Pax Hill are separate nearby buildings. Two options are available: from Friday night to Sunday or Monday Lunch (dinner will not be available on Friday night).

Alternatively, field naturalists may wish to book their own accommodation from the wide range available in Ballarat. Some of the closer caravan parks and motels are listed below. You should make your own bookings as soon as possible as a girls' soccer tournament is being held in Ballarat on this weekend. The registration fee for those organising their own accommodation includes dinner on Saturday and Sunday nights but you will have to organise your own breakfast and lunch.

Program

Friday 19 March
Registration from 4.30pm onwards at Pax Hill.
Tea and coffee will be available at Pax Hill all weekend. BYO mug please. Evening meal – make your own arrangements.
7pm Welcome in dining room followed by an introduction to the local flora and fauna by FNCB members.
Copies of *Wattles of Ballarat* recently published by FNCB will be available to purchase at $12.

Saturday 20 March
Meet at Pax Hill for half and full day excursions.
Morning excursions will leave at 9am and afternoon excursions will leave at 1.30pm
Dinner at 6.00pm
7.30pm SEANA AGM and General meeting including a time to discuss what is happening at your club and the future role of SEANA.

Sunday 21 March
Meet at Pax Hill for half and full day excursions as for Saturday.
Those unable to stay until Monday depart in the afternoon.
Dinner at 6.00pm for those staying until Monday.
7.30 pm Guest speaker, Ern Perkins, Castlemaine FNC and Australian Natural History Medallion winner in 2008 will speak on "Monitoring Change in Natural Ecosystems".

Monday 22 March
The excursion program will continue on Monday morning for those able to stay.
Depart for home after lunch.

Depending on seasonal conditions, excursions are planned to include geology, mining history, grasslands, bushland, mineral springs, Lake Wendouree (wet or dry) and whatever else is interesting.

Tourist Information

Extra information can be obtained from the Visitor Information Centre – contact details will be available at the camp.

The closest accommodation venues to Pax Hill are:
Caravan Parks:
Big4 A Welcome Stranger Holiday Park, 263 Scotts Parade, 5332 7722
Big4 Ballarat Goldfield Holiday Park, 108 Clayton Street, 5332 7888
Eureka Stockade Holiday Park, 104 Stawell Street, 5331 2281

Motels:
Central City Motor Inn, 16 Victoria Street, 5333 1775
Eureka Lodge Motel, 119 Stawell Street, 5331 1900
Miner's Retreat Motel 602 Eureka St, cnr Eureka and Kline St's, 5331 6900
Victoriana Motor Inn, 214 Victoria Street, 5333 3577

Further information about the SEANA Autumn 2010 Camp can be obtained from:
Field Naturalists Club of Ballarat, PO Box W328, Ballarat West 3350
John Gregurke, 03 5339 4993,
jgregurke1@bigpond.com
Peter Dalman. 03 5339 2777,
pdalman@netconnect.com.au

Mount Cole and Pyrenees Region Conservation Values Assessment – Terms of Reference

Ballarat Environment Network, Wombat Forestcare and the Bendigo District Environment Council have received funding through The Wilderness Society's Wild Country Small Grants Program to undertake an assessment of the conservation values of the Mount Cole and Pyrenees region.

The study area for the report is shown in the map below. The project applies to the Central Victorian Uplands and Goldfield Bioregions within the highlighted area (i.e. the small area of the Victorian Volcanic Plain Bioregion in the study area will not be assessed).

Compared to many areas in central Victoria, the study area has a relatively high level of native vegetation cover, mainly forest and woodland vegetation types. This is primarily due to the presence of a number of larger areas of public land, including Mount Cole State Forest, Mount Buangor State Park, Langi Ghiran State Park, Mount Lonarch State Forest, Ben Major State Forest, Waterloo State Forest and Pyrenees Range State Forest.

Areas with higher cover of native vegetation have been identified as priority areas for rebuilding landscape connectivity due to higher inherent resilience and greater 'returns' from scarce management resources.

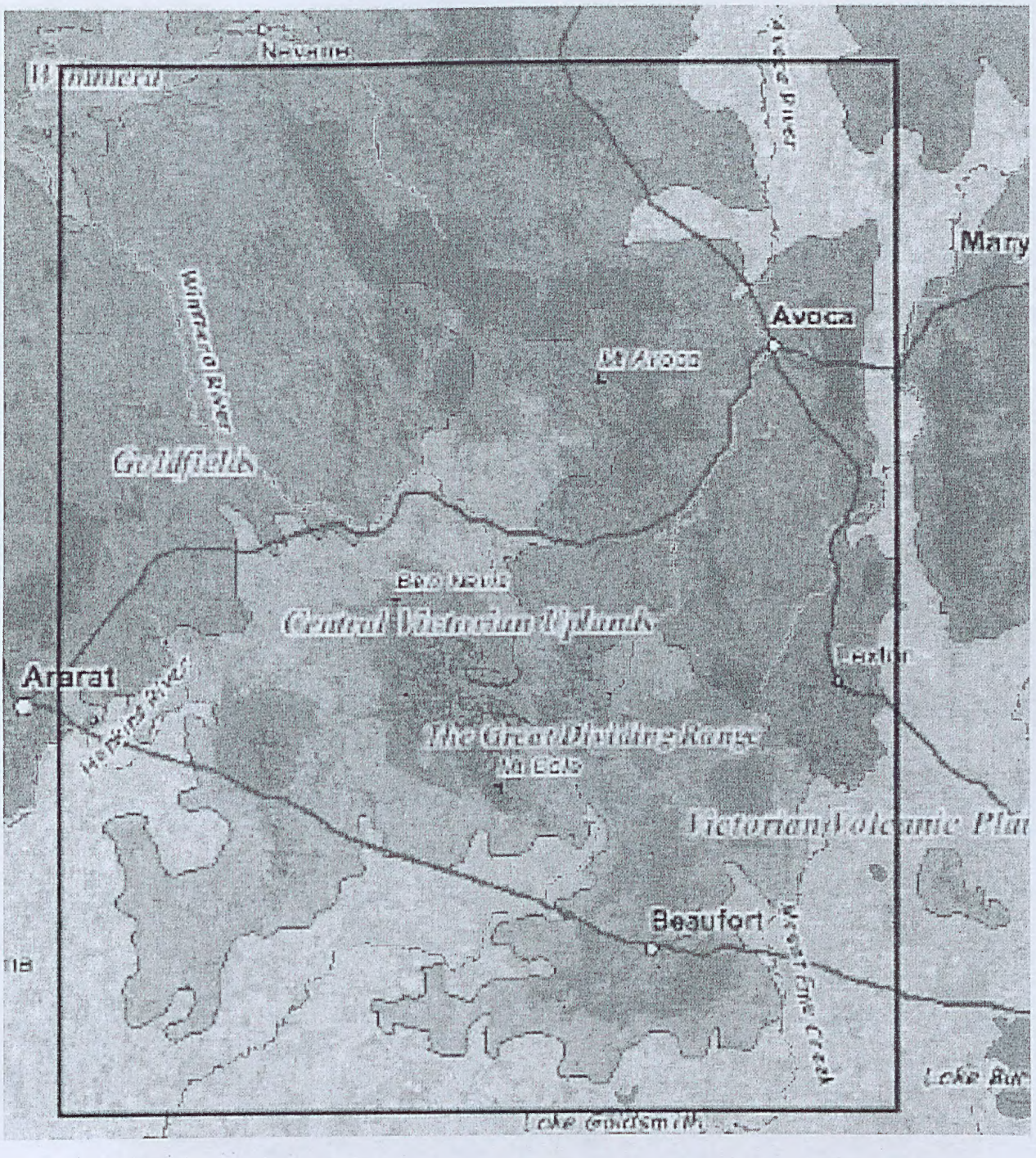
Objectives of the Report
The overall objective of the report is to promote long term conservation in the study area, including the establishment of a network of protected areas. To achieve this the report aims to:-
1. Document the extent and condition of natural values
2. Identify key ecological processes operating in the Study Area, including any information relevant to ecological thresholds, such as vegetation extent, patch sizes and rebuilding landscape connectivity.
3. Identify key threatening processes to the ecological integrity of both private and public land the Study Area, including threatening processes for threatened fauna and fauna species and specific vegetation types.
4. Identify Potential Areas to Rebuild Landscape Connectivity to act as a starting point for further discussion and development.

The report will be produced by consultant and Wombat Forestcare convenor, Murray Ralph. Murray has undertaken consultancy and training in the conservation and land management field for a variety of organisations including Greening Australia, DSE, the University of Melbourne and a number of local Councils. The report will be peer reviewed.

Timeline for the Report
- March 31st 2010: Draft report released
- April 30th 2010: Final date for comments on the report from the community, environmental groups and organizations
- May 31st 2010: Final report released

For further information please email Murray Ralph at pyreneesvalues@gmail.com

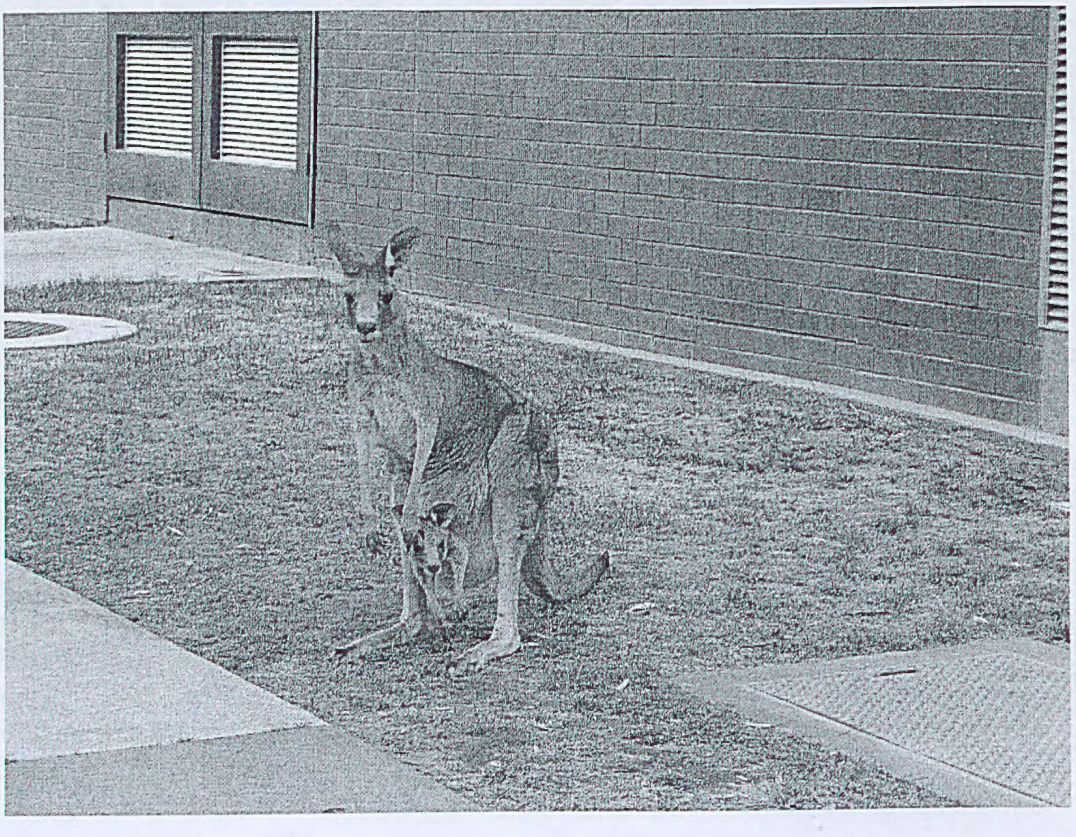
Area covered by the above assessment



Kangaroos on Campus Photographer: Tom Burton

Over the last few years, kangaroos, that would have originally roamed in the One Tree Hill area, have come down regularly to the university campus to feed in the morning. They have recently taken to even staying on campus to rest during the day, so it is not unusual to walk between buildings and become aware that one pair, or ten pairs, of soft brown eyes are watching you from somewhere under a bush or other shady place. This situation might change, once the students return next month, but it has been an absolute privilege. Every time a family group rests somewhere close, you want all the international students to be there to witness it. The university's marketers have made extensive use of the kangaroos in their promotional material already.

The photos below were taken in late January at the Applied Science 2 building; it is apparent, that even mums with their babies are quite unafraid in this artificial environment, although the young did hop into the pouch after a while.



Speakers for BFNC General Meetings, February till June 2010

Date	Speaker	Title
10/2/10	David Cameron, Arthur Rylah Institute for Environmental Research	"Conservation status of the Victorian flora: a progress report on the current review of status using IUCN Red List categories and criteria"
10/3/10	Paul Foley, Bendigo District Astronomical Society	"Astronomy" (including telescope viewing)
14/4/2010	Doug Frood, Pathways Bushland and Environment	"Grassy Woodland Restoration"
12/5/2010	Peter Marriott, Entomological Society of Victoria	"Moths of Victoria"
9/6/2010	Professor Andrew Bennett, Deakin University	"Revegetation in farm land-scapes: are there benefits for wildlife?"

Diary

The General, Bird Observers Group and Fauna Study Group meetings are held at the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise indicated.

General Meetings

Wednesday, February 10 **7.30pm**
David Cameron is the Senior Botanist, Flora Database Curator & Threatened Species Officer, Threatened Species and Communities Section Biodiversity and Ecosystem Services Division, Department of Sustainability and Environment, Arthur Rylah Institute for Environmental Research. His talk will be about "Conservation status of the Victorian flora: a progress report on the current review of status using IUCN Red List categories and criteria".

Wednesday, March 10 **7.30pm**
Paul Foley will be talking Astronomy at the March meeting, and he will also bring some telescopes for viewing the night sky.

Excursions

The Great Dividing Trail Flora & Fauna Mapping excursion will continue in the new year. Watch this space.

Contact for any further detail: Anne Bridley 55493479. For a summary of observed fauna and flora along the trail so far, see page 5ff of the December *Whirrakee*.

Contact Richard Goonan (0423 418 815) if you have comments, questions or suggestions for any other excursions.

Fauna Group

This group normally meets (in the clubrooms) on the fourth Wednesday of the month at 7.30pm. New and seasoned Club members are most welcome to attend.

Wildlife Rescue & Information Network Inc.

W.R.I.N. is an organisation dedicated to the care of orphaned, sick or injured native animals. It is fully endorsed by the Dept of Sustainability and Environment.
Please call our Emergency Number for Help for Fauna in Need. Phone: 0419 356433.

SEANA Autumn Camp 2010 (19-22 March)

See page 5 for a detailed description of the program.

Australian Naturalists' Network – Advance Notice

Sixth ANN Get-together
24 August - 4 September 2010
Host: Chinchilla FNC, Qld
Second Notice:
to reserve a place, the expression of interest form and a deposit of $200 should be sent to the CFNC by 1/12 2009.
Further enquiries: Kath Truscott, email: ann2010@bordernet.com.au

SEANA 2010 (15 - 18 October)

Advance Notice - based at Foster (Camp Rhumba), Wilsons Promontory Excursions planned.